



## Increasing Wisconsin's Renewable Portfolio Standard Will Create Jobs and Help Stabilize Energy Bills

The Wisconsin Legislature is considering a bill (SB 459) that would require Wisconsin utilities to gradually increase their use of wind, bioenergy, and other renewable energy sources from nearly four percent of the state's electricity use today to 10 percent by 2015. This increase in Wisconsin's renewable portfolio standard (RPS) is part of a comprehensive bill to encourage greater investment in energy efficiency and renewable energy in the state, based on recommendations issued in October 2004 by Governor Doyle's Task Force on Energy Efficiency and Renewables.

The Union of Concerned Scientists (UCS) examined the costs and benefits of increasing Wisconsin's renewable standard to 10 percent by 2015, using an updated version of a model we developed for the University of Wisconsin and the Wisconsin Division of Energy in 2003.<sup>1</sup> We found that the 10 percent standard would provide significant economic and environmental benefits for the Badger State, while helping to protect consumers from rising natural gas and electricity prices.

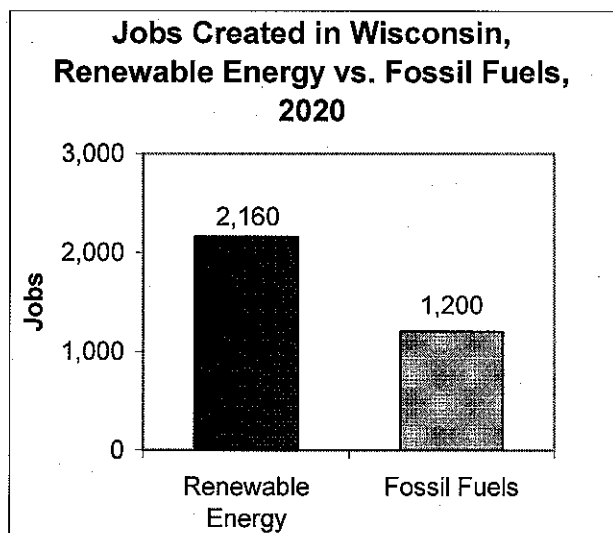
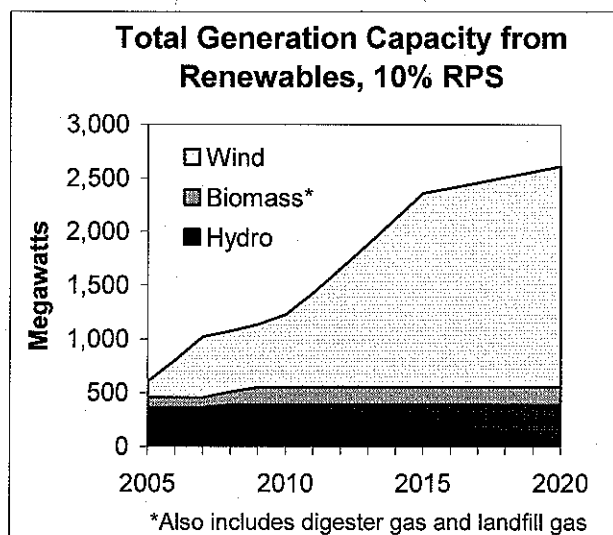
### Renewable Energy Development

Thanks to its plentiful wind, solar, and bioenergy resources, Wisconsin actually has the technical potential to generate more than 2.7 times its current electricity needs from renewable energy. While the 10 percent standard would more than triple renewable generation over current levels in Wisconsin by 2015, it represents a modest step in developing this abundant potential.

Under the 10 percent standard, we found that Wisconsin would develop more than 1,750 megawatts (MW) of new renewable energy capacity by 2015—enough to meet the entire electricity needs of 850,000 typical homes and reduce the use of imported coal and natural gas. Nearly 95 percent of this capacity would be installed in Wisconsin and would come from wind power. These projections include 420 MW of planned wind power additions over the next two years: the 200 MW Forward Wind Energy Project in Fond du Lac and Dodge Counties, the 160 MW Blue Sky/Green Field Project in Marshfield and Fond du Lac Counties, and the 60 MW Cedar Ridge Project in Eden and Empire Counties.

### New Jobs and Income

Increased renewable energy development would create high-paying jobs and other economic benefits for Wisconsin. By 2020, the 10 percent standard would generate 2,160 jobs in manufacturing, construction, operations, maintenance, and other industries—960 more jobs than would be generated to produce an equivalent amount of energy from fossil fuels.<sup>2</sup> Renewable energy would also provide Wisconsin with an additional \$80 million in income and \$110 million in gross state product.



## Economic Benefits for Rural Communities

Many of the jobs identified above would be created in rural areas where the renewable energy facilities would be located. By 2020, the 10 percent standard would also provide Wisconsin's economy with:

- \$1.3 billion in new capital investment;
- \$35 million in payments to rural areas resulting from biomass energy production;
- \$31 million in new property tax revenues for local communities; and
- \$22 million in lease payments to farmers and rural landowners from wind power.<sup>3</sup>

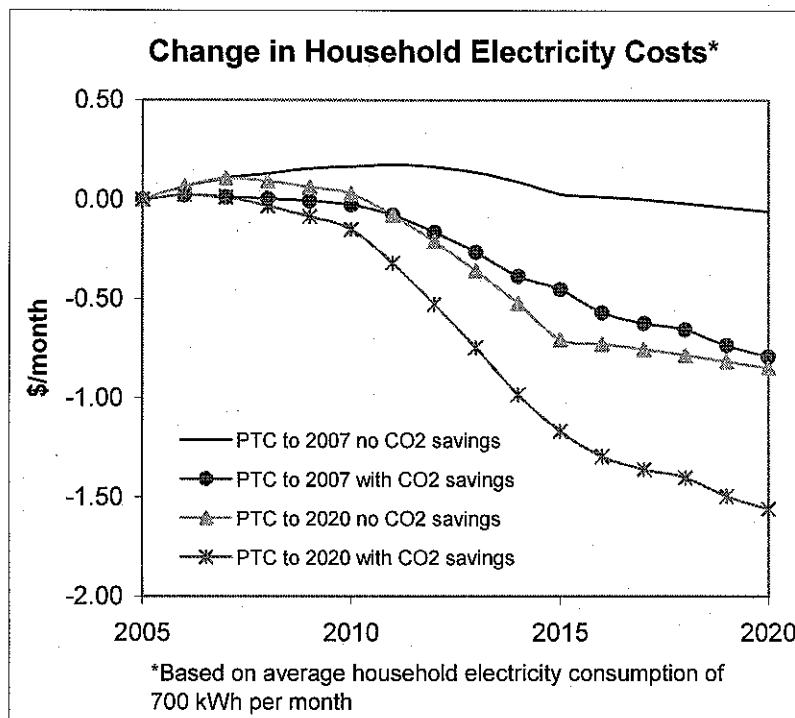
Invenergy, the developer of the 200 MW Forward wind project, has agreed to provide an estimated \$800,000 per year in payments to Fond du Lac and Dodge Counties and \$550,000 in lease payments to landowners. This includes an agreement to pay \$500 to each home located within one-third of a mile of a turbine, and \$750 to each home located within the same distance of multiple turbines.

## More Stable Energy Bills

Increasing Wisconsin's reliance on renewable energy would result in more stable energy bills for consumers. It would help protect Wisconsin consumers from future increases in natural gas and electricity prices and from the cost of meeting future environmental regulations such as limits on global warming and mercury pollution. Renewable energy technologies are not subject to these risks and have more stable and predictable long-term costs than coal and natural gas power plants. Projected improvements in renewable energy technologies along with policies that encourage renewable energy development will help drive down the cost of renewable energy over time.

The 10 percent standard would result in a modest initial increase in consumer electricity bills, reaching a maximum of 18 cents per month for a typical household in Wisconsin (using 700 kWh/month) by 2011, and falling to zero by 2017, with net savings thereafter. These costs would be realized under a scenario that conservatively assumes unlimited future carbon dioxide (CO<sub>2</sub>)—the primary heat-trapping gas that contributes to global warming—or mercury emissions and the federal production tax credit (PTC) for renewable energy developers in place only through 2007 (as specified in current law), and does not include savings from increased energy efficiency investments included in SB 459.<sup>4</sup> If future CO<sub>2</sub> emission limits were included in the scenario, the 10 percent standard would result in almost no change in consumer electricity bills through 2010, reaching a net savings of more than 80 cents per month for a typical household or \$100 million per year in 2020 in avoided emission compliance costs for coal and natural gas plants.<sup>5</sup>

Under a scenario that assumes the current PTC is extended through 2020 but does not limit CO<sub>2</sub> emissions, the 10 percent standard would result in a maximum increase of 11 cents per month for a typical household by 2007, and then declining thereafter, reaching a net savings of more than 80 cents per month by 2020. Finally, assuming both a PTC extension and limit on future CO<sub>2</sub> emissions, the 10 percent standard would save a typical household more than \$1.50 per month.



## Public Health and Environmental Protection

By offsetting generation from power plants that burn coal, oil, and natural gas, the renewable standard would reduce mercury emissions and other toxic air pollution that cause public health problems such as asthma, learning disorders, and even premature death. The 10 percent standard would reduce mercury emissions by 275 pounds by 2020. It would also reduce heat-trapping CO<sub>2</sub> emissions by more than five million metric tons by 2020—a 13 percent reduction compared with 2001 levels and equivalent to taking 800,000 cars off the road. This is a significant reduction as power plants are responsible for more than 40 percent of Wisconsin's total CO<sub>2</sub> emissions from energy use. And by reducing the need to extract, transport, and consume fossil fuels, the renewable standard would limit the damage done to the state's water and land resources and conserve natural resources for future generations.

## A Cleaner, Safer Energy Future

A 10 percent renewable portfolio standard would make Wisconsin's energy supply more reliable and secure. It would use local energy sources to create high-skilled jobs, improve the state's rural economies, and help protect consumers from future increases in energy prices. Increasing Wisconsin's standard is a small but common-sense step away from the unstable, dirty fossil fuel supply on which the state currently depends, and toward a future built on clean, renewable energy.

*For additional information, visit the UCS Clean Energy website at [www.ucsusa.org/clean\\_energy](http://www.ucsusa.org/clean_energy).*

<sup>1</sup> See Clemmer, S., B. Grace, and K. Cory. 2003. *A Study to Evaluate the Impacts of Increasing Wisconsin's Renewable Portfolio Standard*. Prepared for the University of Wisconsin-Madison and the Wisconsin Division of Energy. October 31. Online at: <http://energytaskforce.wi.gov/docview.asp?docid=2>. The technical appendix to this report, online at [www.ucsusa.org/clean\\_energy](http://www.ucsusa.org/clean_energy), includes an updated version of the methodology and assumptions from this analysis.

<sup>2</sup> We conservatively assume that only 33 percent of the manufacturing for wind and solar technologies installed in Wisconsin is produced by businesses located in the state, and we do not include any jobs or economic development that would result from Wisconsin-based manufacturers exporting equipment to other states or countries. If Wisconsin is able to attract renewable energy manufacturers that will produce equipment both for use in the state and for export, jobs and income generated by the renewable electricity standard would increase significantly.

<sup>3</sup> Results are presented in cumulative net present value 2005 dollars, using a seven percent real discount rate. Job results are for the year 2020.

<sup>4</sup> This scenario also includes necessary investments in new transmission lines and upgrades to get wind power and other renewable generation to consumers, as well as to relieve transmission congestion.

<sup>5</sup> Avoided emission allowance costs assume conservative CO<sub>2</sub> allowance prices of eight dollars per ton initially, increasing by five percent per year. The California Public Utilities Commission requires utilities to include these values in planning and bidding for new generation. By comparison, CO<sub>2</sub> allowances that have recently traded for more than \$30 per ton in the European Union's emission trading system.